# OUTLINES OF A THEORY OF WAGES.

F. W. TAUSSIG

The discussion of the theory of wages in recent years has turned attention to a more and more careful examination of the relation of wages to the product of labor. Clearly there is a relation between wages on the one hand, and product or efficiency on the other. It is this relation, for example, which explains the great international variations of wages. If the return to labor is higher in the United States than in England or Germany, higher in these than in Italy or Russia, the differences are due mainly to the greater or less productiveness of labor in the several countries. But what is the precise nature of the connection?

Those familiar with the course of economic thought in the United States will recall how hopefully many of us listened to the doctrine set forth on this topic by the first President of our Associaition, the honored Francis Walker. Wages, he said, are determined by the residual product of labor. The other shares,—interest, rent, business profit,—are settled by independent causes; what remains after these shares are apportioned, goes to the laborers. But this doctrine, welcome though it was as a clear improvement over what was then current, could not stand the test of critical analysis. The independent determination of the other shares was not made out. It was not shown that interest and business profits were settled by causes different from those acting on wages. The residual theory served its purpose as a first onset, but soon proved ineffective, and dropped out of the line of combat.

Its place has been taken, in the recent development of economic theory in this country, by another formulation of the relation between product and wages. There is a *specific* product of labor, we are told, and it is this which determines wages. And similarly there is a *specific* product of capital, which in turn settles interest. This doctrine, as need not be stated in the present gathering, has been maintained in the brilliant writings of Professor Clark, and has been stated with special precision in those of Professor Carver. The terms in which it is put are sometimes varied; wages are said to be settled by the imputed product, or the marginal product, of labor. In one formulation or another, its vogue is no less than was that of Walker's doctrine twenty years ago. It makes its appearance in most of the text-books that are now in fashion. Yet I cannot but believe that it will share the fate of its predecessor. It will be remembered as a promising attempt to grapple with an intricate problem, a step forward in our slow and uncertain progress toward the truth; but it will not be accepted as a definitive advance.

The grounds for this doubt have been stated with admirable logic by Professor Böhm-Bawerk. They are closely connected with the analysis of capital and its functions by that acute thinker. The reasoning of Professor Clark assumes a separate productivity of capital and of labor. That productivity it is attempted to illustrate and to prove by supposing the addition of successive doses of labor and of capital, and by analyzing the consequences which will follow as these increments are added. The reasoning is familiar to you. Throughout, under static conditions, there is supposed to be a tendency to an increase in the return, but a diminishing increase; a tendency to a lessening marginal increase, and thus to a determination of wages and interest by the marginal increase of output.

Elsewhere I have expressed my doubts as to this universality of the law of diminishing returns.[1] That principle, as one of universal application, deserves still further the attention of the economists, and seems likely to receive it. But the irregularity or uncertainty which I suspect to inhere in it, and to stand in the way of its wide-reaching and unfailing application, is not of importance for the purposes of the present discussion. Whether certain or uncertain, this principle of diminishing returns and marginal increase can give a clue to the determination of only *one* of the two items to which it is applied. It may point to the cause which determines interest. I believe it does so; interest is determined proximately by the increase of product resulting from the last or marginal application of capital. But it does not also point to the cause determining wages. In the application of the principle to both wages and capital, and in the attempt to reach an independent law for each, there is reasoning in a circle.

The ground for this statement is, briefly, that capital is not an independent factor in production. Capital simply means a different way of applying labor. When we say that more capital is added to a given amount of labor, we use a short-cut expression. That given amount of capital did not drop from heaven, or come into existence in any other way than by the application of labor. Professor Böhm-Bawerk has rightly insisted on this fundamental fact. It is expressed pithily by Professor Marshall when he says that "the substitution of capital for labor is really the substitution of labor, combined with much waiting, in the place of other forms of labor combined with little waiting."[2] Capital means, at the outset, surplus or sav-

[1] See *Quarterly Journal of Economics,* May, 1908. *Cf.* also Professor Landry's article in the same *Journal,* for August, 1909.

[2] *Principles of Economics,* Book VI, ch. I, p. 593. (4th edition.)

ings, enabling us to extend the time-saving method of production. If there be an additional surplus, more labor can be applied to the preparatory steps, and more capital ("capital goods") will be *made*. Very likely there will then be an eventual increase in the output of consumable goods and an eventual increase of satisfactions or utilities. But the making of the capital is only a way of applying labor to making the consumable goods. According as one way or another way is followed—simple or elaborate—much or little waiting is entailed. According as one or the other is used, more or less of consumable goods may be expected in the end. But there is no separate product of capital. There are conditions as to the eventual outcome which determine how much can be got in the way of excess or premium or interest (all these terms point to the same thing) by those who at the outset possess the surplus means, who do the waiting, and who become the eventual owners of the output. In other words, the net earnings of the capitalists are determined by this process. But there is no separate product of the capital. Nor is there any separate product of the labor. There is one product, all produced by labor, and indistinguishable as to its source. Some part of the enlarged product the capitalists can retain for themselves. The laborers get less than their labor as a whole has produced. Having this means of explaining how much the capitalists will *receive*, we may be tempted to say that we know what their capital has produced. Being able to say that the amount which the laborers produce is lessened by

There are other passages in Professor Marshall's book which possibly could be interpreted otherwise. Sundry illustrations are used to show that there is a "net product" of any instrument; yet he observes that "illustrations of this kind merely indicate part of the action of the great causes which govern value. They cannot be made into a theory of interest, any more than into a theory of wages, without reasoning in a circle" (p. 589).

what the capitalists receive, we are tempted to say that the laborers *produce* only that lessened amount. But in fact there is no separate product of either.

One remark let me interpose. If there be a factor in production separate from labor, it is not capital, but "abstinence" or "waiting" or "preference for present goods" or "time preference." All these phrases (which I give in their historical order)[3] refer to the same thing—that unwelcome sacrifice which the postponement of present enjoyment is supposed to entail. I will not enter at this stage on the thorny questions which the notion raises—whether there is really a sacrifice in "saving", whether there be a rate of interest determined in the end by that sacrifice, whether any explanation or justification of interest can be deduced in this way. I wish simply to point out that here, if anywhere, is the factor related to interest in the way in which labor is related to wages. Here is the factor which might conceivably be said to be productive in the way in which labor is productive. Both are acts of human volition done in ways which add to the sum of utilities.

None the less, it seems to me not a happy use of terms to call waiting or abstinence productive. What the socialists say of the sterility of mere abstinence is well put. We can maintain, it is true, that unless there be waiting by somebody—either by the laborer himself or by some one who does the waiting for him—labor cannot be applied in the more productive ways; and the fact that waiting thus enables the more productive ways to be followed, is one element in explaining why those who do the waiting secure a return in the way of interest. But the waiting

[3] "Abstinence" is Senior's phrase, adopted by the so-called classical writers. "Waiting" is Macvane's, accepted by Marshall. "Preference for present goods" is Böhm-Bawerk's. "Time-preference" is Irving Fisher's.

can hardly be said to *produce* anything; it simply enables labor to produce more.

At all events—to return to the main thread of the reasoning—it can not be said that capital produces anything, still less that there is a separate or specific product of capital. Capital represents only a step in the elaborated processes by which labor of all kinds carries on the operations of production and finally brings forth utilities. Professor Carver, who has formulated the doctrine even more sharply than Professor Clark, remarks that the question whether capital is productive can be easily answered: surely tools are useful.[4] But the question seems to me not quite solved in this way. Is not the labor which made the tools "useful"? And is there a productiveness of the tools *separate* from the productiveness of the labor that made them? Labor is more useful—yields more utilities—if applied first to making tools, and then to using them; but is there a specific product of the tools?

If there is no specific product of the tools or of capital, there is none of labor as distinct from capital. There are differences in the productiveness of labor according as it is applied in different ways—by first making tools or without stopping to make tools, with more tools or with less tools. But there is no product of the labor distinct from the product of the tools. To repeat, the whole product is due to labor; or, if there is to be any modification of the proposition, the whole product is due to labor and waiting. We may be able, by a principle of "imputed" productivity, to make out what determines the *reward* of the laborers and of the capitalists owning the tools. But in sober fact, in concrete reality, we cannot make out any separable product of either.

---

[4] See Carver's *Distribution of Wealth,* p. 216.

Let me now present another mode of stating the relation between wages and product. It can make no pretensions to novelty; but it may bring together familiar ideas in a more consistent way. The formula which I should be disposed to frame is this: wages are determined, under competitive conditions, by the *discounted marginal product* of labor. I invite your attention to the two elements in this formula; "marginal" and "discounted."

What is meant by *marginal* product will be obvious enough. It is indicated by the old-fashioned conception of agricultural rent. Wages and interest are determined, in that conception, at the margin of cultivation. Any excess secured on land better than the marginal land goes to the landowner, and does not affect the returns of other persons. The same principle is applicable to monopoly gains, and to all differential gains. The laborer, and for that matter the investor, who deals with the owner of good land or with a monopolist, must accept what can be paid by the marginal landowner or the competitive producer. Any extra or differential returns go to the fortunate owners of those instruments which have been sheltered by nature or by social institutions against unfettered competition.

Two remarks may be added as to the significance of the marginal element in the formula. The first is that a broad competitive margin is assumed to exist, at least as to capital: one sufficiently extended to have a real and effective influence. If there be no normal or competitive returns to capital; if there be a universal régime of monopolies or combinations; or if it be but an accident whether a given kind of instrument yields large or small returns to its owners—then we can lay down no law of wages, and but a precarious one as to interest. To this point I shall return at a later stage in the argument.

The second remark is that we must not be misled by convenient phrases as to the superior productiveness of land or of monopoly instruments, still less misled by phrases as to their having a specific or separate product. Those who maintain that there is a specific product of capital maintain also that there is a specific product of land, and that rent (in the old-fashioned sense) is this specific product of the land. Many of the older economists, who did not dream of the modern applications and connotations of such phrases, also spoke of rent as the product of the land. But the same thing may be said of natural agents as of instruments made by man: throughout, labor is the essential agent in production, and neither land nor capital produces anything. I have just stated that labor applied in some ways (through the *previous making of tools*) *produces more than labor applied in other ways*. Similarly, labor applied on some lands produces more than labor applied on other lands: hence arises the differential return which we call "economic rent." Labor applied in connection with monopolized instruments produces more (in terms of value) than labor applied with competitive instruments: hence the differential return which we call "monopoly profits." There is no separate product of the land or of the monopolized tools. There are simply differences in the product of labor according as it is applied under different conditions. These differences in product explain how economic rent and monopoly profits arise. Here, as with regard to competitive instruments, or "capital" in the ordinary sense, we deceive ourselves by imputing as "product" that which is really the income (earnings, if you please) of the owners of certain instruments of production.[5]

[5] The reader will perceive that on this topic my point of view seems to be different from that of Böhm-Bawerk, who maintains

Let us turn now to the other element in the formula: the *discounted* product of labor.

Discount implies an advance. No explanation of wages is adequate which does not recognize the fact of an advance. On this topic I must again differ with my friend Professor Clark, who has denied that there is anything in the nature of an advance.[6]

The situation seems to me so simple that I find it difficult to adduce any proof. Mere statement of the obvious facts suffices. Industry takes time: the process of production is a prolonged one. Wealth is unequally distributed, and the immense majority of the laborers have not the wherewithal to support themselves during the prolonged period. Hence their remuneration is advanced to them out of a surplus possessed by some one else, and the capitalist class secures its gain or profit by advancing to the laborers less than they eventually produce.

This view underlay the old wages fund doctrine: a doctrine always inadequate and often sadly misapplied, but having its core of truth. The great theoretical defect of the wages fund doctrine, as it used to be stated, was

---

that labor and natural forces stand side by side as the fundamental agents of production. The difference, I believe, is one of phrase only. It signifies little whether we say that labor *at the margin* works side by side with natural forces, or say that it simply guides those natural forces and is itself the one essential agent in production. What I wish to insist on is that, *above the margin*, the natural forces are in no peculiar sense specific contributors to production.

The doctrine that labor is the one essential agent in production is, of course, very different from the doctrine that labor is entitled to the whole product. I have always believed that the socialists used tenable language in saying that labor produces all. But the question whether labor therefore should receive all, is quite different. It is not to be settled by semi-metaphysical reasoning, but by broad inquiry as to the evolution of human society, the motives to industry, the perfectibility of man.

[6] I refer again to my paper in the *Quarterly Journal of Economics*, May, 1908.

that it attended only to a small segment of the industrial process. It assumed that the advance to laborers was needed only until a *saleable* product was achieved. That stage once reached, no futher advance was supposed to be required. But modern analysis has made clear the prolongation and the unity of the whole process of production. Not through one stage only — not merely until the individual employer can pay money wages to his workmen — but through all the stages, from the first gathering of materials and the first fashioning of tools to the last steps in transportation and exchange, advances to the workmen as a whole are made by the capitalists as a whole.

Modern anaylsis has done more. It has shown how the theory of wages is related to the general theory of value. The analysis by the leaders of the Austrian School of the higher and lower ranks of goods; the conception of the derived value of instruments and materials; the exchange between present goods and future goods, which Böhm-Bawerk has made a permanent part of economic theory; the principle, so skilfully developed by Professors Fetter and Fisher, that the present value of any form of wealth is an anticipation and capitalization of the utilities yielded,—all this points to the mode in which labor is related to its ultimate product. That product is *discounted.* The laborers get wages determined by the utilities ultimately yielded by their labor, but diminished by the discount due to its emergence in the future.

This discount we may assume provisionally to take place at the current rate of interest. Evidently the simpler the processes, and the more predictable their outcome; the more effective, too, the competition among capitalists,—the closer will be the correspondence between future product and present wages. The discount then will be easy to

calculate. Where the process is complicated, long stretched-out, and uncertain as to its outcome, the relation between wages and product is a very loose one. Such an operation as the construction of the Panama Canal illustrates the maximum of uncertainty in the relation between product and wages. It will take years to build the Canal; it will take further years before its effect on the ocean routes and on the cost of transportation are worked out; and still further years before these changes affect the international division of labor and the ultimate increase of product due to increased geographical specialization. Meanwhile those engaged on work at the Canal do not receive the speculative discounted value of the product of their own work. They receive the current discounted value of labor in those routine industries where experience has indicated what the output will be. What is true of the Panama Canal is true, in less degree, of all new and venturesome operations. In such operations the business man — the entrepreneur — exercises his most characteristic functions, and, if successful, procures his highest returns. He not only discounts, he speculates; and he pays to his laborers the rate of wages fixed in those operations in which the discount is comparatively simple and calculable.

Thus we reach once again the proposition to which, a moment ago, I promised to return; that, if we are to have a working theory of wages, a competitive margin must be supposed, at which capital secures a normal return and at which the process of discounting is carried out with some approach to accuracy. And this effectiveness of competition must appear not merely with reference to floating means or surpluses seeking investments,—"moneyed capital." It must appear as to the real apparatus of production, as to factories, mills, railways, shops. Recent

writers on capital have justly pointed out that we are apt to deceive ourselves, both as to wages and as to interest, by thinking of moneyed capital only, of the payments of interest on money loans and the payments of wages in money. How is it as to the factories and mills? Is competition among them, or at least through a broad tier of them, so effective that their capitalist owners secure but a normal return, and their laborers secure the discounted value of the product due to their labor,—to the labor of *all* those who have worked at the intricate series of successive steps?

Whether there be such a competitive margin, broad enough to settle the general range of wages, is a question of fact, and one by no means easy to answer. On the one hand we are confronted with the portentous growth of large-scale production, and the development of industries which seem to set at nought all our theorizing about a normal course of investment. In this regard, monopolistic combinations seem to defy economic law as well as statute law. On the other hand, we hear that in many directions business has become a matter of cents, and that the slightest margin to the good or to the bad makes the difference between financial success and financial failure. While in iron and steel making we see industry on a vast scale, with competition disappearing, and profits either abnormally large or quite vanishing, cotton manufacturing and shoe manufacturing are still businesses with a normally narrow margin of profit.

My impression is that on the whole the competitive margin still exists, and that there is such a thing as a normal return in the capital market and therefore in the general labor market. Doubtless there is more irregularity and uncertainty than under simpler conditions of industry. Yet a sufficient approach to a leveled result

exists to warrant us in speaking of normal interest and normal wages. There is probably a lessening *range* of competition. The competitive region, though still broad enough to give a ποῦ στῶ, is far from being coextensive with industry. Economic rent and monopoly profits (it is not material to the present discussion whether these be regarded as two different sorts of return or as essentially similar) play a larger part than in previous generations. There is a wider divergence between wages and the *total* discountable product of labor, even though still an approximation of wages to the *marginal* discounted product. The concentration of wealth and the inequality of ownership are growing greater, and give rise to the gravest social problems. But these divergences affect our theory only in causing emphasis to be laid on the word "marginal" in its formulation.

At all events, if there be no competitive margin for capital, and no normal and governing rate of discount for the product of labor, I see my way to no theory of wages, or at least to no theory that points to any determination of wages. If the return to all capital be simply a "rent" depending on the derived utility of the instrument, and subject to no leveling influence from the conditions of supply and competition, then as between laborers and capital owners the whole relation is simply that of a game of grab. Each side tries to get as much as possible, and there is no telling what will be the outcome. In some of the older German text-books on economics there is a statement of the theory of wages of this sort: wages cannot fall below a minimum determined by the bare limits of subsistence; and they cannot rise above a maximum determined by what the product enables the employer to pay. Between these two limits wages are said to fluctuate, "according to supply and demand."

The formulation always seemed to me a highly unsatisfactory one. The range between the minimum and maximum may be a very wide one, and there is nothing to indicate where, within those limits, the actual rate will fall. This same difficulty is presented, if we assume the return on capital to be subject to no normal or marginal regulation. If it be all a matter of monopoly or non-competitive return, then the laborers may secure more or less in the way of wages according as they fight more or less vigorously for their share. The better they are organized, the more they have aid from legal enactment, the more they use or threaten physical violence, the more they will succeed in getting. Conversely, the better the capitalists are organized, and the more they have at their command the law, or physical coercion, or the threat of starvation, the more will they in their turn succeed in getting. Perhaps we are in a fool's paradise in supposing there is anything normal or regular in the return to capital owners; their doings may be after all, as the socialists say, only a process of wringing as much as possible from the poor and oppressed. This is a pessimist view, but one that seems to me to follow naturally from the negation of a regulating competitive margin.

Suppose now that it be granted there *is* a regulating margin; what determines there the rate of discount on the product of labor? It has been assumed in the preceding to be a discount at the current rate of interest. What settles that current rate of interest?

Here we must be on our guard against another danger of reasoning in a circle. Interest has been spoken of, in the opening paragraphs of this paper, as determined not indeed by any specific or marginal productivity of capital, but by the difference in the output of labor due to

labor's being applied in the more productive ways. In the language which Böhm-Bawerk has taught us to use, interest depends on the "technical superiority" of present goods; that is, on the possibility, because of the possessions of a present surplus, of applying labor in more elaborate and effective ways. So far I go with that penetrating thinker. But if we go only so far and no farther, we get no determination of wages. In this view (of technical superiority as the determinant of interest) we virtually assume wages. Substantially it says that interest depends on the excess of product over wages,—the difference between the goods turned over to the laborers in the present and the ultimate future product of their labor. If interest is determined by this process, wages also are determined by it. The one depends on the other, and neither is separately determined. The rate of discount, on this reasoning, *results* from the process of advances to laborers; it does not regulate or determine the amount of those advances.

The only escape from this difficulty is to be found in some independent regulator or determinant of the rate of discount. The essential defect of Böhm-Bawerk's analysis has always seemed to me to be that he ignores the possible existence of such a regulator; or, to be more careful in statement, that he ignores the possible regulating effect of certain factors. The older economists spoke of an effective desire of accumulation, of a minimum necessary to induce saving. Our modern phraseology is that of a preference for present over future goods, or (in Professor Fisher's phrase) a general "time-preference." If there is such general preference, or if there is a *marginal* preference, and a marginal rate of return necessary in order to induce the postponement of gratification to the future,—then and then only have

we an independent determination of interest, and so a tenable theory of wages as the result of an operation of discount.

I am aware that economists differ on this subject, and certainly are much more chary than they were a generation ago of assuming any fundamental supply price. The question is one of fact. On this question there is a chain of historical evidence to which, in my judgment, sufficient attention has not been paid. That evidence appears in the comparative steadiness of the rate of interest through the period of modern industry and investment. The industrial era in which we live is a couple of hundred years old. During these two centuries (more or less) the rate of interest has undergone no fundamental change. In the middle of the eighteenth century England and Holland could borrow at 3 and even 2 per cent. Since that time the rate has gone up and down, with the fluctuating demands for war expenditures and for industrial investment. Yet it has returned sooner or later to something like the level of 3 per cent, perhaps 4 per cent. Meanwhile, the *amount* of capital, measured in terms of surplus seeking investment, has undergone extraordinary fluctuations. The demand for capital (in the sense of demand for present money means) has undergone no less extraordinary fluctuations. The amount invested, the industrial possibilities of advances to laborers, the waste of present means in wars and armaments,—all these have varied enormously. Is it not a striking fact that, as the outcome of all the great changes in the conditions both of demand and supply, the rate of interest itself has changed surprisingly little? and does this not indicate *prima facie* that there is some regulating force which keeps it at a fairly constant level? No one would say that this level is absolutely

constant, or that it is determined with anything more than a rough approximation. The minimum — if there be one — perhaps is tending to decline; though, as the eighteenth century figures indicate, it does not appear that a lower range has been reached in our time than was familiar a century or two ago. Something like 3 per cent is the lowest rate which has been maintained, under modern capitalistic conditions, for any considerable period. It is possible, of course, that the failure of any lower rate to persist may indicate only that the incessant advance of the arts has kept up the "technical superiority" of present goods, and has caused the demand for the means of investment to outstrip steadily even the wonderful increase in supply. But may it not also indicate that something like a position of equilibrium has been maintained, and that there *is* an independent force regulating the rate of interest and so the terms of discount for labor's product at the competitive margin?

Let us now summarize this theory of a *discounted marginal product*. It assumes the spread of production over time; it assumes inequality in the ownership of wealth, and advances by the fortunate (sometimes deserving?) capitalist owners to the less fortunate laborers; it assumes in those advances a process of discounting by which the laborers receive less than they ultimately produce; it assumes a competitive margin, at which a current rate of discount is in force; it assumes that what laborers get at the competitive margin determines the rate of wages for *all* laborers; and finally it assumes that the rate of interest or discount is determined not as the result of the process of advances to laborers, but by a cause independent of that process.

It may be said that this is after all only another mode

of stating what was meant by those who maintain the theory that wages are determined by the specific or imputed product of labor and that interest is determined by the specific or imputed product of capital. Perhaps so. I would not dispute on matters of phraseology. I shall be glad if my conclusion is found to be in substantial accord with that reached by others who have grappled with this, the most difficult and fundamental problem of economics. The phraseology here submitted seems to me not only more accurate, but preferable on the ground that it purports to do no more than coldly analyze the facts of the modern world. The statement that labor gets the specific product of labor leads easily to an implication that this is all that labor *ought* to get. Even if it were proved that labor gets in any real sense its specific product, or that capital gets in turn its own specific product, the implied conclusion does not seem to me necessarily to follow. Whether it is right that every man should get what he himself produces, raises deep-reaching questions as to justice. Should the strong retain what their strength enables them to produce, or is it equitable that they should share with the weak? The essential ground on which distribution according to works can be defended, is utilitarian. The strong, it may be said, would not put forth their strength in full unless they expected to keep the resulting product for themselves. But these high topics need not be considered here. The first business of the economist, though by no means the only business, is to analyze the facts, and to present as simply as he can, without implication or apology, the results of his analysis. And from this point of view, I submit, it is more accurate and helpful to speak of the discounted marginal product of labor, than of the specific or imputed product of labor.

One other topic, and I conclude. If there be a normal rate of interest determined by time-preference, a sort of supply price of capital;—is there perhaps also a supply price of labor, a normal rate of wages determined by the laborer's standard of living? The discounted marginal product of labor may be said to indicate only the demand price of labor. The long run or equilibrium price may be said to be settled by a supply price, based on the standard of living. We know that this was the Ricardian and Malthusian view. In that older view, the rate of wages was determined temporarily by the relation between the wages fund and the supply of laborers, that is, by demand and supply; but was determined permanently by the habits and standards of the laborers, or by something analogous to cost of production. The doctrine of a standard of living as determining wages still bulks in our modern treatises. What validity may it have?

On one point we shall all agree. The standard of living does not affect wages directly. It acts on wages only by its effect on numbers. All the standard of living in the world will not make wages high if laborers are many and if their product (their marginal discounted product) is small. People often talk loosely on this topic, as if a high standard of living were *per se* efficacious in making wages large. In this company it need not be argued that it affects wages only by its influence on the marriage rate, the birth rate, the supply of labor over generations. Looking at the long-run course of the movement of population, do we see evidence of a basic rate of wages determined by the standard of living?

It seems to me very doubtful whether we can answer this question in the affirmative. The history of wages during the modern period indicates no such tendency to a normal rate as is suggested by the history of the rate of

interest. We find indeed sometimes a clinging to an habitual standard, indicated by stationary birth rates and marriage rates. Too often, alas, we find a rate of wages nearest the bare minimum, and indicating a willingness to multiply so long as the barest means of supporting life are earned. But, surveying the modern era of the last century, we find, on the whole, in all the civilized countries, a slow but steady rise in the rate of wages, and with it a slow decline in the birth rate. As to interest, we find a steady rate, with perhaps a tendency to decline. As to wages, we find no steady rate, but in recent times a clear tendency to rise. If there be a standard of living, it is a shifting standard, and one that influences the supply of labor not in such a way as to keep wages at a given level, but such as to enable a steady advance in wages to be maintained.

There is a familiar passage in J. S. Mill's Political Economy, in which it is said that no improvement in the condition of laborers which is gradual will avail for their ultimate betterment. The advance in numbers will overtake any gradual improvement, and nullify the gain. Only a great and rapid uplift, such as the French Revolution brought for the peasantry of France, was expected by him to affect the standard of living and the permanent rate of wages. Happily the experience of the last half century in civilized countries has shown that this prediction is not justified. A slow and gradual rise in wages has taken place, and has not been nullified by an increased birth rate. Population has indeed advanced, and numbers have increased; but in consequence chiefly of a declining death rate. The standard of living slowly rises, but as a consequence of higher wages rather than as a cause acting to bring about higher wages. We need not, therefore, go far back of our formula, in analyzing the

causes that act on the general rate of wages. If, indeed, the procreative instinct is followed without check, and multiplication takes place as blindly with men as it does with animals, we may be sure that wages will always be at the bare minimum and the struggle for existence relentless. But this situation the civilized peoples have left behind them. For them, the general rate of wages,—that is, the material welfare of the great mass of mankind,—depends not only at any given stage, but over periods as long as it is possible for us to observe, on those conditions of demand which I have attempted to analyze in this formula,—the discounted marginal product of labor.